March 3, 1959

Dr. Joseph Lein
Bristol Laboratories
Syracuse 1, New York

Dear Joe:

To yours of the twenty-fifth.

I suppose there could be antibiotics which would work only on intracellular bacteria, but I did not have quite such subtlety in mind. I simply thought that this approach might be used in secondary screening for evaluation of which activities were worth concentrating on for further development.

It is kind of you to ask me to attend your celebration, and you certainly have my best wishes. However, I am expecting to be away in Europe for much of May and June, and it would be unwise to make a fast commitment. Why don't you ask Bernie Davis? He certainly could put on an excellent show.

I am sure there has been more done by way of attempt at inter-species transduction than has been published, since many people won't bother to put down their negative results. I suspect that Hotchkiss has gone into this fairly thoroughly. The positive information now available is that DNA from streptococcus of certain special strains will go into pneumococcus, but the combinations that are effective are probably more closely related than their Latin names would indicate. Schaeffer has made a more extensive survey of inter-species transformation in hemophilus. He finds that the efficiency of transformation diminishes greatly with less and less closely related strains. Transduction by phage occurs quite readily among the entire Salmonella group, but whether the species names should be given much significance is a question. Did you know that it was possible to cross E. coli with Salmonella and with Shigella under certain circumstances and with certain strains? Since this can be done, I would be reasonably certain that transduction, either by virus or by DNA, would work when suitable systems with competent receptors are worked up. Whether a really concerted effort has been made to find some odd cases, occurring rarely, of distant inter-species transfer, I don't know.

Yours as ever,

Joshua Lederberg
Professor of Genetics

JL:rm